

## **REMARKS**

This is in response to the Office Action dated November 2, 2006. In view of the foregoing amendments and following representations, reconsideration is respectfully requested.

Initially, the specification and abstract have been reviewed and revised in order to make a number of minor clarifying and other editorial amendments. To facilitate the entry of the amendments, a substitute specification and abstract has been prepared. No new matter has been added. Also enclosed is a "marked-up" copy of the original specification and abstract to show the changes that have been incorporated into the substitute specification and abstract. The enclosed copy is entitled Version with Markings to Show Changes Made.

Next, by the above amendment claims 1-4 have been amended, claims 5-10 have been cancelled, and new claims 11-17 have been added. Thus, claims 1-4 and 11-17 are currently pending in the present application. Note that each of the pending claims is directed to the elected invention.

Next, on pages 2-4 of the Office Action, claims 1-2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Liu et al. (U.S. Patent Application No. 2001/0017109) in view of Colpo et al. (U.S. Patent No. 6,682,630). Also, claims 3-4 are rejected under 3 U.S.C. 103(a) as being unpatentable over Liu in view of Colpo et al as applied to claims 1-2, and further in view of Okumura et al. (U.S. Patent No. 6,297,165). It is submitted that the present invention, as embodied by the amended claims, now clearly distinguishes over the applied references for the following reasons.

Each of independent claims 1 and 3 has been amended to require “a controller for controlling at least one of the first and second high frequency electric power sources according to the condition of the plasma detected by the first detector and the voltage or the current detected by the second detector, thereby controlling an implantation concentration of the impurity to be implanted.

**Liu** discloses a plasma treatment system having a vacuum chamber 14, a sensor 70 monitoring power delivered to an antennae 46 (signal A), a probe directly measuring plasma density (signal B), and a plurality of Faraday cups 78 attached to a substrate wafer holder 82 (signal C). A controller adjusts tuning capacitors 58 and rf generator 66 in response to signals A, B, C. However, as acknowledged by the Examiner, Liu does not disclose “a second power source for applying a second high frequency electric power to the table.”

**Colpo** discloses a processing chamber 20 and means for biasing a workpiece 26, e.g., one or a number of electrical contacts supplied by a bias source 34 outside of the chamber 20. The bias source 34 can be set to provide an ac bias (including radio frequencies), a dc bias or a ground bias. Colpo, however, does not describe the function or effect provided by the workpiece bias source 34 for applying the high frequency electric power to the table or support 24.

Thus, the Liu reference discloses a first high frequency power source, which is controlled according to the condition of the generated plasma, and Colpo discloses a second high frequency power source for applying high frequency power to the support. However, the collective teachings of the Liu and Colpo references do not disclose or

suggest a controller that controls at least one of the first and second high frequency power sources according to both outputs from the first and second detectors. i.e., the condition of the plasma detected by the first detector and the voltage or the current detected by the second detector.

Therefore, even if there is a reason to combine the Liu and Colpo references, the combination would not meet each of the limitations of independent claims 1 and 3. Accordingly, it is submitted that claims 1 and 3 are clearly allowable over the Liu and Colpo references.

Okumura is applied to teach an electrode provided adjacent a table and connected through a capacitor to the table. However, Okumura does not disclose the features of the present invention that are lacking in the Liu/Colpo combination, as proposed by the Examiner. Thus, claims 1 and 3 are allowable over the prior art of record. The remaining claims depend, directly or indirectly, from one of claims 1 and 3, and thus are allowable at least by virtue of their dependencies.

Furthermore, it is noted that claims 2 and 4 now require a first detector for detecting and measuring an amount of light emitted from the plasma. It does not appear that the Liu and Colpo references disclose such a detector.

In view of the above, it is submitted that the present application is now clearly in condition for allowance. The Examiner therefore is requested to pass this case to issue.

In the event that the Examiner has any comments or suggestions of a nature necessary to place this case in condition for allowance, then the Examiner is requested

to contact Applicant's undersigned attorney by telephone to promptly resolve any remaining matters.

Respectfully submitted,

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February 2, 2006